SUMMARY OF THE INVENTION

[0007] The invention provides a quality control method for ensuring that a particular bioassay process is yielding acceptable data. Using the methods of the invention, the reliability of data used in a diagnostic procedure may be improved. Another embodiment of the invention includes using the Knowledge Discovery Engine ("KDE") to classify and archive biochips and to distinguish between type of biochips. Alternatively, the KDE may be used to classify and archive diluents and distinguish between diluents having different composition or concentrations.

[0008] The invention may use the KDE to identify hidden patterns across a wide variety of serum samples and biochips to generate a control model. Alternatively, the KDE does not have to be used to perform the methods of the invention.

[0009] The KDE is disclosed in U.S. Patent Application Serial No. 09/883,196, now U.S. Patent 7,096,206 ~~now U.S. Application Publication No. 2002/0046198A1~~, entitled "Heuristic Methods of Classification," filed June 19, 2001 ("Heuristic Methods"), and U.S. Patent Application Serial No. 09/906,661, now U.S. Patent 6,925,389 ~~now U.S. Application Publication No. 2003/0004402~~, entitled "A Process for Discriminating Between Biological States Based on Hidden Patterns from Biological Data," filed July 18, 2001 ("Hidden Patterns"), the contents of both of which are hereby incorporated by reference in their entirety. Software running the KDE is available from Correlogic Systems, Inc. under the name Proteome Quest™.

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[0010] As described above, the KDE does not need to be used to practice the invention. One method of practicing the invention includes defining a number of features characteristic of the control sample. As used herein the term "feature" refers to a particular mass to charge ratio (m/z) within a spectrum. Additionally, as used herein, the term "vector" refers to a feature having a particular magnitude. Therefore, a vector is a two-dimensional value having both a mass to charge value and a magnitude.

[0011] After the features are defined, the vectors are plotted in n-dimensional space, where n is the number of defined features. The plotted vectors will define a centroid. A centroid is a